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UPS SNMPWEBCARD

USER'S GUIDE

FCC Radio/TV Interference Notice

The SNMPWEBCARD has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a domestic environment. Both these devices generate, use and can radiate radio frequency energy and, if not installed in accordance with the instruction manual, may cause harmful interference to radio communications. The user must use shielded cables and connectors with these products. Any modifications to these products not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Technical Support

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TABLE OF CONTENTS

Chapter 1: Introduction	1
System Requirements	1
Details - SNMPWEBCARD	2
Package Contents	3
Chapter 2: Configuration	4
Selecting an IP Address	4
Terminal Mode Configuration	4
Chapter 3: SNMP	5
Chapter 4: Browser Interface	7
Establishing a Connection	7
To Log On to the SNMPWEBCARD	7
Navigating the SNMPWEBCARD's Web Pages	7
Status Screen	8
Action Menu	9
Settings Menus	11
TCP/IP Menu	15
Telnet Menu	15
Web Menu	15
SNMP Menu	15
Logs	17
Chapter 5: Troubleshooting	18
Appendix A: Specifications	19
PS/2 Connector	20
Serial Port	20

Congratulations on the purchase of your new SNMPWEBCARD. Your SNMPWEBCARD will connect your UPS to your LAN. This will allow you to monitor and control the UPS from any PC on the LAN, using either:

- SNMP protocol and popular SNMP network management platforms such as HP OpenView, IBM NetView, etc., or
- A Web browser.

SNMPWEBCARD System Requirements

- Tripp Lite UPS with a standard card slot.
- Ethernet networking environment using the TCP/IP protocol.
- SNMP-based management station such as:
 - HP OpenView,
 - IBM Tivoli
 - Sun SunNet Manager,
 - Novell ManageWise

Or

- Web browser supporting HTML frames, forms and Java, such as:
 - Netscape Navigator 3.0 or later
 - MS Internet Explorer 4.0 or later
- For “Terminal Mode” configuration, a terminal emulation (communication) package.

SNMPWEBCARD Details

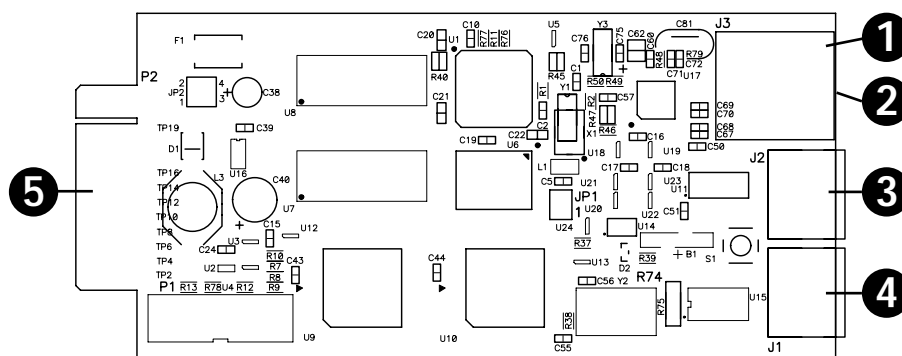


Figure 1-1: SNMPWEBCARD

Item	Description
1	RJ45 Ethernet Connector
2	RJ45 Ethernet Connector with Link & Status LEDs
3	Configuration Port
4	ENVIROSENSE Connector
5	UPS Slot Connector

Package Contents

The following items should be included in your package. If any items are missing, contact your dealer immediately:

- SNMPWEBCARD
- Installation and Quick Start Guide
- Configuration Cable
- CD-ROM Including
 - MIBs
 - Owner's Manual

Your SNMPWEBCARD can be configured for use with many different LAN setups and for many different applications. This chapter explains the procedures and settings used in SNMPWEBCARD configuration.

Selecting an IP Address

You must choose an IP address for your SNMPWEBCARD before connecting it to your network. The IP address must be unique to the SNMPWEBCARD, and it must be in the same address block subnet as the computer(s) it will communicate with. For example, if the computer(s) it will communicate with are in the 192.168.x.x block, you might choose the IP address 192.168.1.1 for your SNMPWEBCARD.

Terminal Mode Configuration

Before your SNMPWEBCARD can communicate over your LAN, it must be assigned an IP address via terminal mode configuration using a direct **serial cable connection** and a terminal (communication) program. Other SNMPWEBCARD settings may also be configured in terminal mode.

Terminal mode configuration procedure is as follows:

1. Connect the “Configuration” port on the SNMPWEBCARD to the serial port on your PC or terminal (see Figure 1-1).
2. Configure the VT100 compatible terminal (communication) program with the following settings:

Setting	Value
Baud rate	9600
Data	8 bits
Parity	None
Stop Bit	1
Flow control protocol	None

Table 2-1

(**Note:** Only follow Steps 3-4 if the SNMPWEBCARD did NOT automatically receive an IP address when you performed Step 1 above.)

3. Manually Configure SNMPWEBCARD

a. Disconnect Ethernet cable and remove the SNMPWEBCARD from the accessory slot.

b. Set the SNMPWEBCARD's jumpers. For most Tripp Lite UPS models, set to jumper position 1 (see Fig.1). For models listed below with their corresponding series numbers, set to jumper position 2 (see Fig. 2). Note: Series numbers can be found on the back of the UPS.

4. Configure SNMPWEBCARD in Terminal Mode

a. When the configuration main menu appears on your computer screen, you will be prompted to accept or modify current setting. Type M (modify).

b. A password prompt will appear. Type the default terminal password: TrippLite.

c. Reset Configuration to default values (Y/N) will appear. Type N (no) and press ENTER.

d. Network Interface Parameters will appear. You will be prompted with Should target obtain IP settings from the network? Type N (no) and configure the card to your networks subnets. If you do not know what IP address to give the SNMPWEBCARD, contact your system administrator.

e. Save settings. The card will then reboot; depending on the selected configuration settings, it will take 2-5 minutes for the card to become initialized.*

5. Prepare SNMPWEBCARD for Operation

a. Remove the cable connecting the SNMPWEBCARD to the computer.

b. Test network configuration by pinging the IP address given to the SNMPWEBCARD.

c. If test is successful, replace the UPS accessory slot plate and secure it with screws to hold the SNMPWEBCARD firmly in position.

* Or configure other SNMPWEBCARD settings as explained in this chapter.

Chapter 3

SNMP

Your SNMPWEBCARD allows a UPS to be managed by SNMP tools, using the UPS SNMP Agent and the UPS SNMP MIB.

The UPS SNMP Agent is in the SNMPWEBCARD SNMP firmware. It responds to standard SNMP commands (*get*, *get next* and *set*) and will generate SNMP traps (messages) if configured to do so.

The MIB (Management Information Base) determines what parameters can be monitored and controlled.

MIB (Management Information Base)

The UPS SNMP MIB must be installed on each management station that will monitor the UPS.

To Install The MIB:

- Copy the .MIB file from CD or download to a directory on your system.
- Use the *Import-Compile* command of your SNMP Management program to import the .MIB file.

You may monitor and control a UPS system with an SNMPWEBCARD using an Internet browser. The card generates navigable HTML pages. These HTML pages are updated to match UPS status every 30 seconds; the browser will refresh the displayed information automatically. To update the information on a page sooner, reload the page.

Establishing a Connection

To connect to the SNMPWEBCARD:

1. Start your browser.
2. In the Address field, enter `http://IP_Address` (where `IP_Address` is the IP Address of the SNMPWEBCARD, e.g. `http://192.168.1.1`).
3. The Log On Page will appear.

To Log On to the UPS Adapter

To log on and continue to the SNMPWEBCARD's other Web pages:

1. If you have not configured the SNMPWEBCARD to require a user name or password for access, hit the Submit Logon button to continue.
2. If the card is configured to require a user name and/or password for access, enter them here before hitting the Submit Logon button to continue.

(**Note:** Default user names are guest with no password and admin with no password.)

Navigating the SNMPWEBCARD Web Pages

The logon default screen is the Status Screen. (See Figure 4-1.) This screen is divided in to four sections:

- 1) Menu Bar
- 2) Device Information
- 3) Device Summary
- 4) Alarm Status

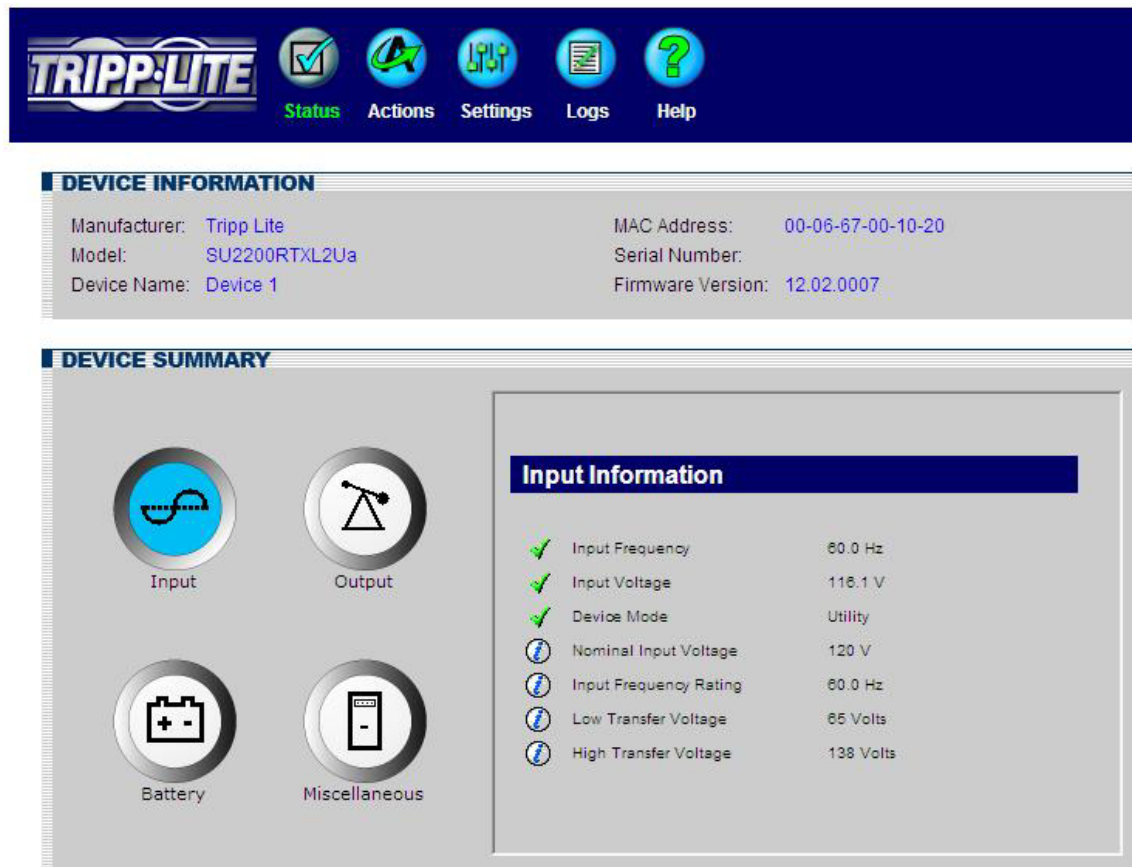


Figure 4-1: Status Screen

Menu Bar

The buttons on the Menu Bar are headings. Clicking on a heading will take you the main page for that menu. If there are sub-menu options, buttons will appear in a frame on the left-hand side of the screen below the menu bar. Clicking on a sub-menu button will make it active. The button will change color to gray/blue, indicating that it is now the active page.

Device Information

The Device Information frame lists the characteristics that distinguish the device from others on the network.

Device Summary

The Device Summary frame divides all possible variables that the device can support into four categories:

Input—Summarizes all variables related to input items, and displays an icon next to each item to indicate its status.

Output—Summarizes all variables related to output items, and displays an icon next to each item to indicate its status.

Battery—Summarizes all variables related to battery items, and displays an icon next to each item to indicate its status.

Miscellaneous—Summarizes all variables that do not fall in to one of the other three categories, and displays an icon next to each item to indicate its status.

Alarm Status

The Alarm Status frame monitors connected devices for normal or alarm conditions. This frame will appear at the bottom of every screen, providing a convenient means of notification when alarm conditions occur. (See Figure 4-2.).

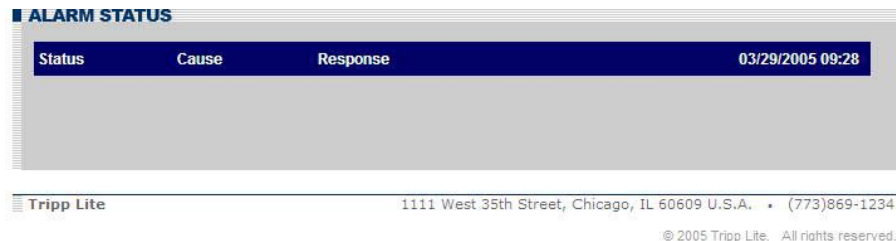


Figure 4-2: Alarm Status Frame

Status—Indicates the severity of the alarm condition. If nothing is listed here, there are no current alarms and the device is operating within normal thresholds.

Cause—Displays the reason for the alarm, such as UPS on Battery.

Response—Displays either PowerAlert's response or a possible user response to the alarm. For example, if a UPS goes to battery and PowerAlert is configured to shut down the operating system, the following message will appear in the response field: Prepare system for shutdown.

Action Menu

Available Actions

Shutdown— When the specific event occurs, turns the UPS off after a defined period of time.

Notification—Sends an email message to an individual on the contact list.

SNMP—Sends an SNMP trap to an IP address.

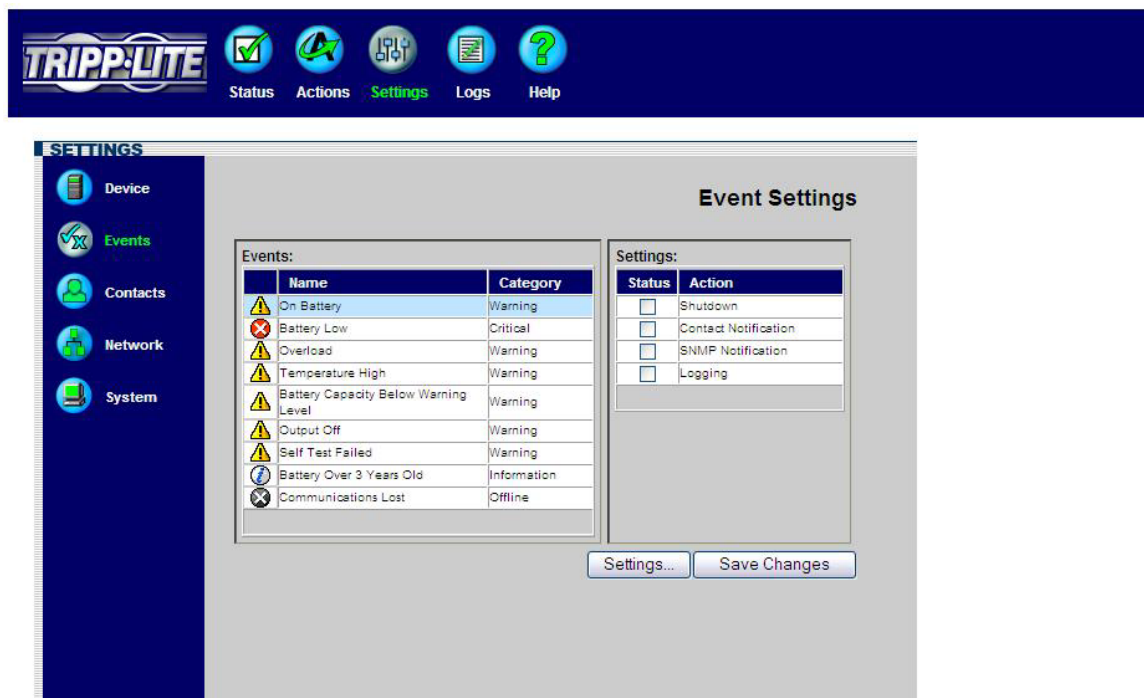


Figure 4-3: Event Settings Screen

Loads

The Loads Screen provides a graphical interface to turn on and off any controllable load segment or outlet on a UPS system that supports load management. For each controllable load segment, a representative on/off control will be displayed in the load table. If the UPS does not support individual load control, only one load segment will be displayed. This allows for input of information identifying the equipment that is connected to the UPS. (See Figure 4-4.)

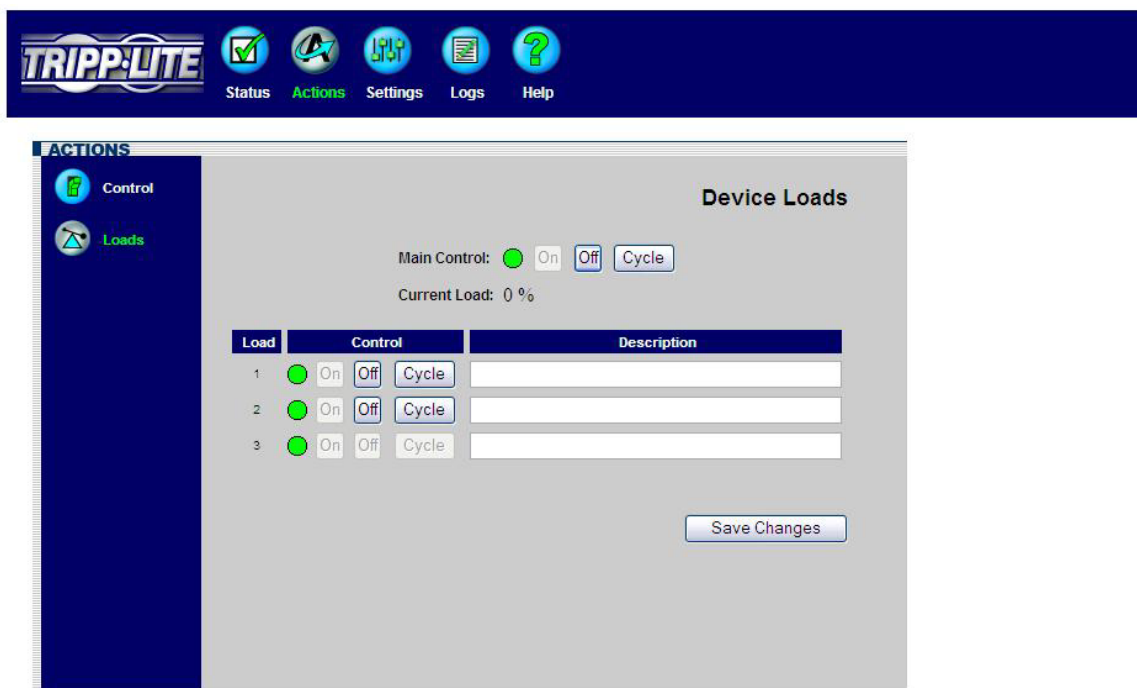


Figure 4-4: Loads Screen

Settings Menus

Device

This menu allows device settings to be customized for simplified remote management of the device via a web browser or a remote PowerAlert Console application. (See Figure 4-5.)

Location—Provides an alphanumeric field to identify the specific location of the power device.

Region—Provides an alphanumeric field to identify the general area where the power device is located.

Device Name—Provides an alphanumeric field to identify the device.

These fields allow IT personnel to specify information about a device. This information is useful for asset management tools such as PowerAlert Enterprise, which allows administrators to view all power devices on a network on a single screen. Example:

Location-Store 1444
Region-Chicago
Device Name-Web Server

Date UPS Installed—Provides an easy way to track the age of the UPS. This is necessary since UPS battery life expectancy is typically 3-5 years.

Serial Number—Provides a field for an asset tracking ID number, if required.

Low Battery Warning—By default, Tripp Lite UPS Systems signal a low battery warning at 10 percent. Changing this default value to another number provides flexibility in setting actions based on a battery capacity other than the 10 percent.

Note: Not all devices will have all of these device settings options, and others may have more.

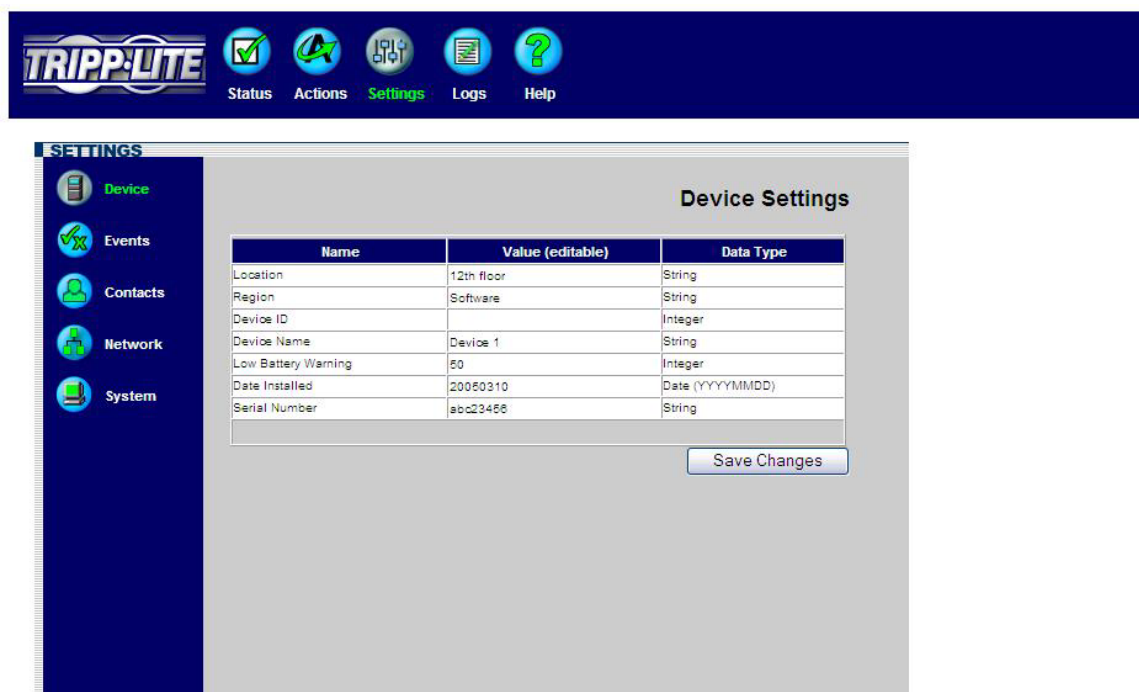


Figure 4-5: Device Settings Menu

Events

The Events settings page allows you customize PowerAlert's response to power events or abnormal conditions on the device.

A sample list of events is shown below. Note: Available events vary by device.

To select an event, click on it. The available actions for that event will appear on the right side of the screen. No check in the checkbox indicates that the action is turned off. Click on the box to enable the action, then click on the settings button to configure settings for the action. (See Figure 4-6.)

Available Actions

Shutdown—Turns the UPS off after a defined period of time when the specified event occurs.

Notification—Sends an email message to a person in your contact list.

SNMP—Sends an SNMP trap to an IP address.

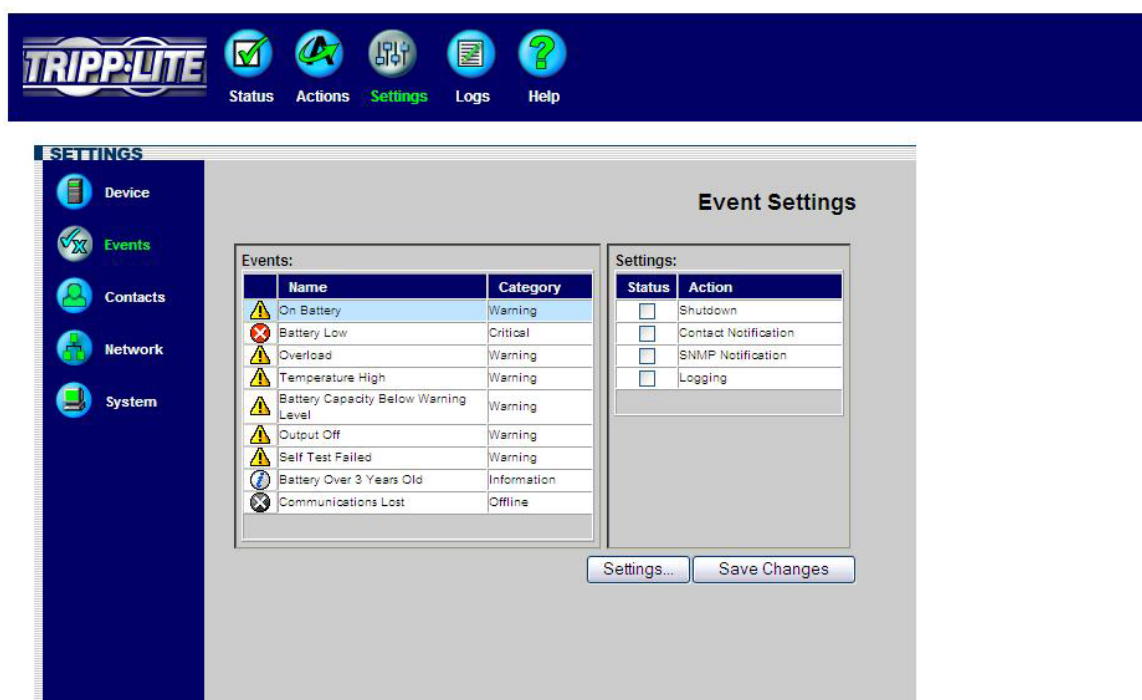


Figure 4-6: Event Settings Menu

Contacts

The Contact Settings Menu allows you to set up email and SNMP notification destinations for events. (See Figure 4-7.)

Email—To configure email it is necessary to set up both the SMTP server and the email address to be messaged when specified events occur.

SMTP Settings—Click on the SMTP Settings buttons to define an email server. A new window will appear that will let you define the address of the SMTP server and the port to use. (Most email servers run on port 25, however, please contact your network administrator to verify the SMTP settings of your server). The email address may be an IP address (e.g. 192.168.1.1) or a domain name (e.g. smtp.server.com). To use the domain name, it is necessary to configure the DNS server in the Settings-Network-TCP/IP menu.

Adding an Email Contact—To configure an email address to use when events occur, click on the New button and fill in the information in the pop-up window. Once the SMTP server and at least one email contact have been added, you can send a test email to verify that the settings are correct. To send a test email, click on an email contact and then click the Send Test Email button. Note: In order for Events to send an email it is necessary to turn on email notification for each event in the Settings-Event menu.

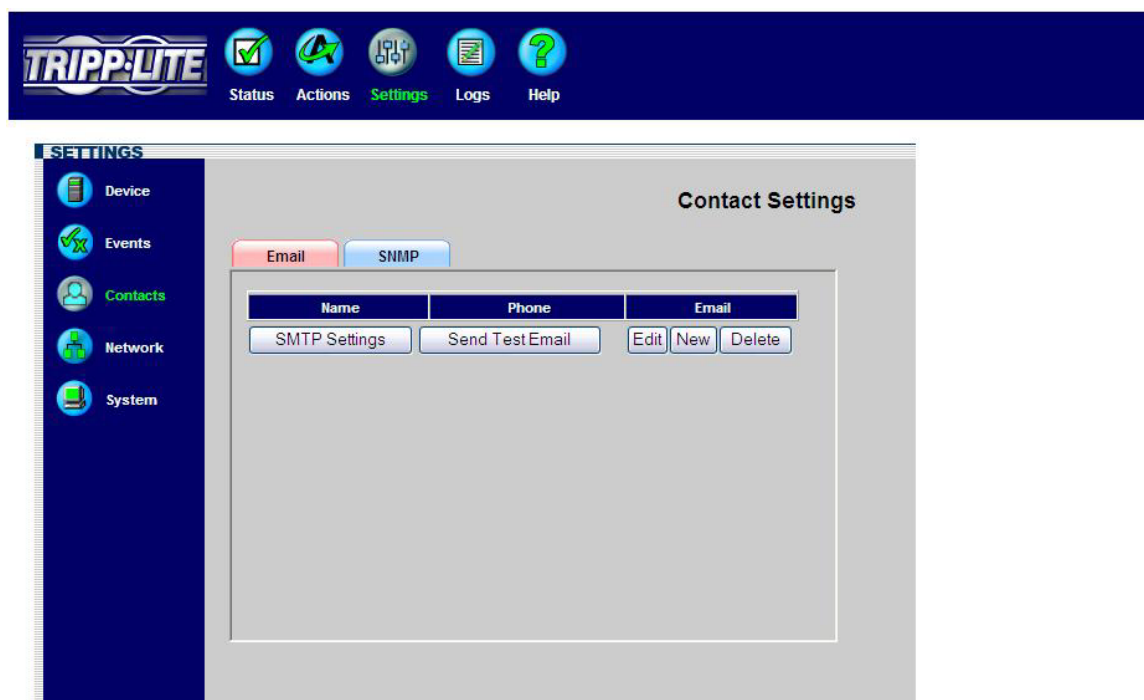


Figure 4-7: Contact Settings Menu

SNMP—The SNMP tab allows for configuration of SNMP Trap destinations. To configure SNMP traps it is necessary to define the IP address and the community name to use when traps are sent out. Click on the New button and fill in the information in the pop-up window. In order for Events to send a SNMP trap, it is necessary to turn on SNMP trap notification for each event in the Settings-Event menu. (See Figure 4-8.)

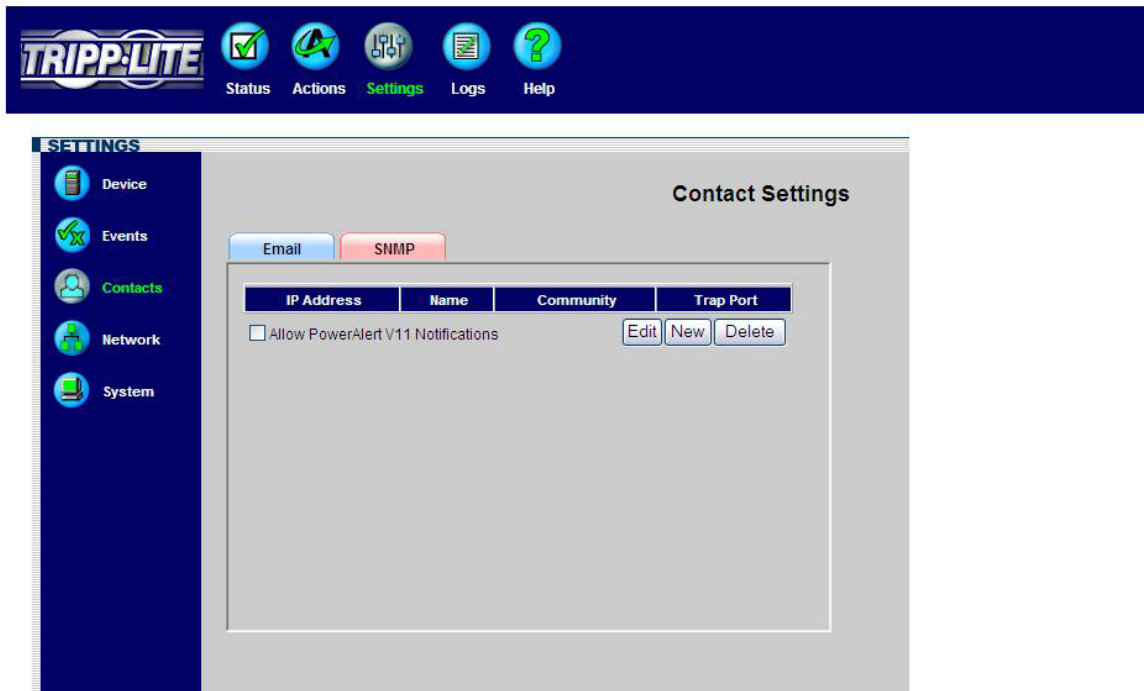


Figure 4-8: Configuring SNMP Trap Destinations

Network

The Settings-Network Menu defines how the SNMPWEBCARD will operate on a network. Please contact your network administrator if there are any questions regarding these settings. (See Figure 4-9.)

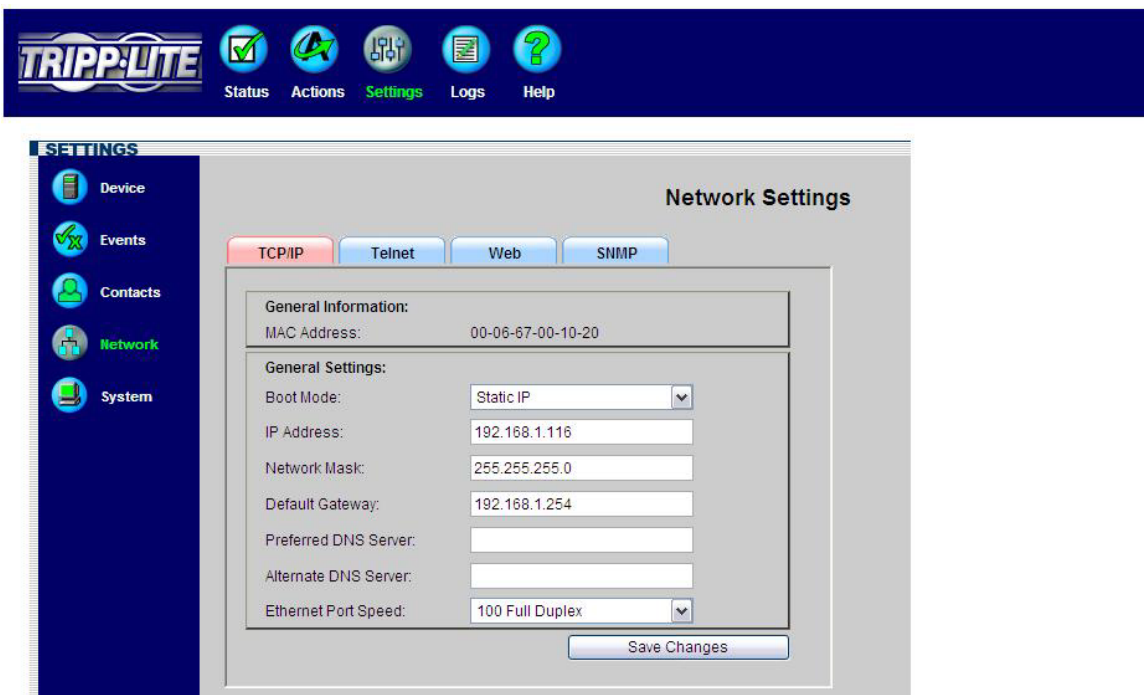


Figure 4-9: Network Settings Menu

TCP/IP Menu

Mac Address—Unique physical address of the SNMPWEBCARD.

Boot Mode—Defines how the card will obtain an IP address to run on the network. There are two options:

Static: The card must be assigned an address manually.

DHCP: The card will request an address from a DHCP server on the network. This is the default setting. If a DHCP server is not available or does not respond to the card's DHCP request, the card will not be able to access the network. If no DHCP server is available, it will be necessary to configure the card via a terminal session to assign a static IP address.

IP Address—The address of the SNMPWEBCARD.

Default Gateway—The local default gateway.

Preferred DNS server—The IP address of the primary Domain Name Server.

Alternate DNS server—A secondary DNS for use if the primary DNS is not accessible.

Ethernet Port Speed—The network speed at which the SNMPWEBCARD communicates. By default, it performs an auto-negotiation to determine the speed at which it can run.

Telnet Menu

Access —Enable or disable telnet access to the SNMPWEBCARD.

Port—The TCP port for Telnet access. (The default port for Telnet is 23.)

(**Note:** Telnet will not be accessible unless a password is set for the admin user. Guest users will not have access via Telnet.)

Web Menu

Access—Enable or disable access via web browsers to the SNMPWEBCARD.

Protocol—Select the protocol to enable.

HTTP: Hypertext Transfer Protocol is the standard protocol used by web browsers. This is the default protocol.

HTTPS: Hypertext Transfer Protocol over Secure Socket Layer (HTTPS) is a web protocol that encrypts and decrypts user page request as well as the pages that are returned by the web server to the user. HTTP must be enabled on the SNMPWEBCARD for the embedded web server to respond to HTTPS requests. Once enabled, web pages can be accessed securely using HTTPS (<https://xxx.xxx.xxx.xxx>).

HTTP Port—The TCP port to access the embedded web server. The default is 80.

HTTPS Port—The TCP port to access the embedded web server over Secure Sockets Layer. The default is 443.

(**Note:** Enabling HTTPS will cause the SNMPWEBCARD to restart; it will take at least 5 minutes for the card to reinitialize.)

SNMP Menu

The SNMP menu allows up to four community names to be defined for permission to access information on the SNMPWEBCARD via SNMP, GETS and SETS. If a network address of * is entered, this grants the defined access level to any IP address with the defined community string.

System

Date/Time—The SNMPWEBCARD has a real-time clock with an onboard battery for backup when the card has been powered down. To set the date/time, enter the correct information and click the Save Change button to write the changes to the card. (See Figure 4-10.)

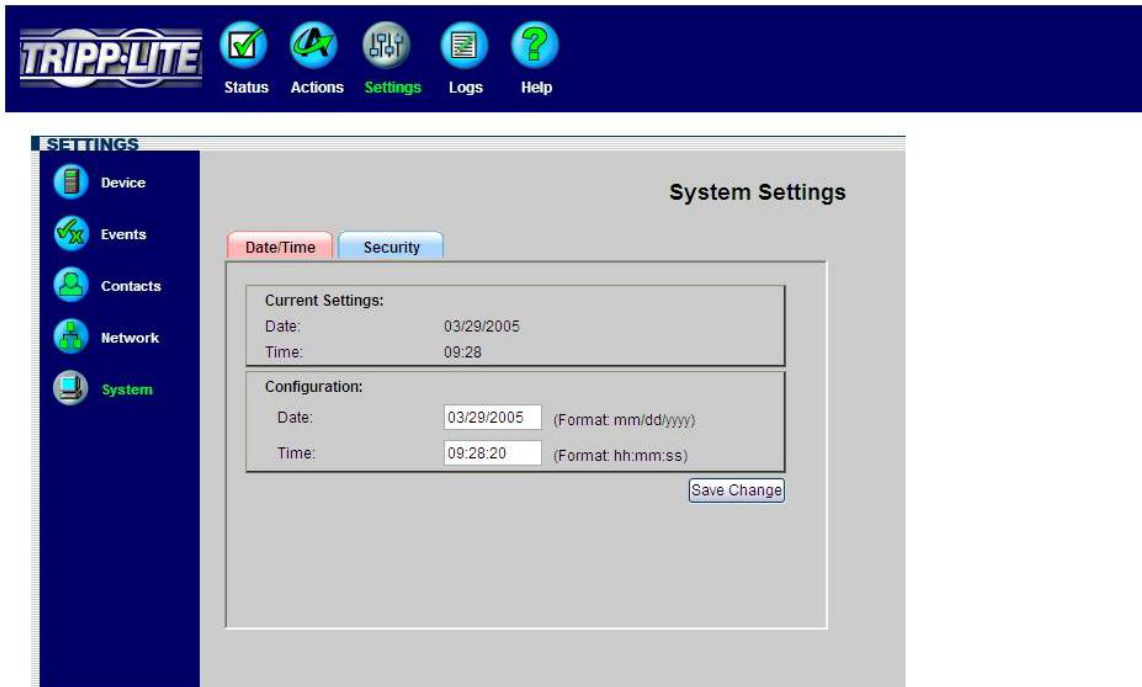


Figure 4-10: Set Date/Time

Security—The SNMPWEBCARD has two available levels of security: a guest level (user: guest) allowing read-only access to the card, and an administrator (user: admin) level. By default, no passwords are assigned to these accounts. For additional security, it is recommended that passwords be defined for both accounts. Once passwords have been entered, click the Save Changes button to write the new passwords to SNMPWEBCARD.Logs. (See Figure 4-11.)

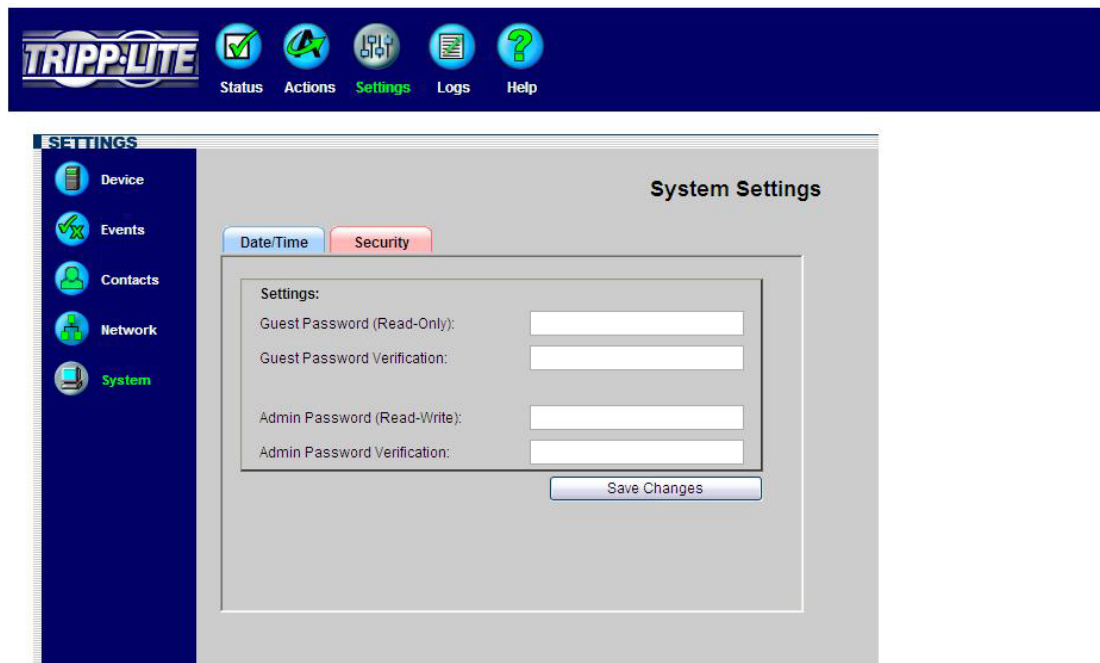


Figure 4-11: Set Security Levels

Event Logs

All events are logged to PowerAlert's log database. These event logs may be reviewed by date or by event/category. (See Figure 4-12.)

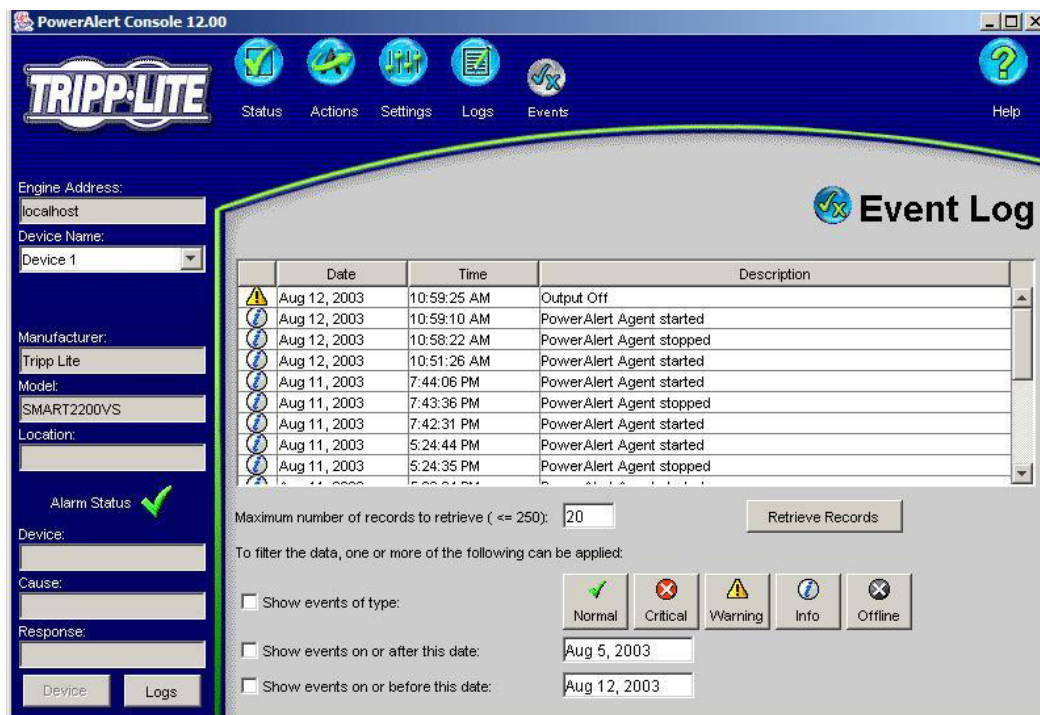


Figure 4-12: Event Logs

Chapter 5

Troubleshooting

This chapter covers some common problems you may encounter during the configuration and normal operation of the SNMPWEBCARD.

Whenever a problem is encountered:

- Make sure that the SNMPWEBCARD is turned on.
- Check all connections and make sure they are secure.
- Refer to the following problems and implement any recommended solutions.
- If, after trying the recommended steps, the problem persists, contact your dealer for technical support.

Problem The IP Address of the SNMPWEBCARD is unknown.

1

Solution 1 Remove the SNMPWEBCARD from your LAN, and use *Terminal Mode Configuration* (see page 5) to view and set the IP Address.

Problem Unable to perform SNMP *get* operations.

2

Solution 2 Check the SNMP settings stored in the SNMPWEBCARD. The IP Address of the PC you are using must be entered in one of the *SNMP - Manager IP Address* fields, with *Read* or *Read/Write* permission. The *Community String* on the PC and SNMPWEBCARD must match.

Problem Unable to perform SNMP *set* operations.

3

Solution 3 Check the SNMP settings stored in the SNMPWEBCARD. The IP Address of the PC you are using must be entered in one of the *SNMP - Manager IP Address* fields, with *Read/Write* permission. The *Community String* on the PC and SNMPWEBCARD must match.

Problem Unable to receive traps at your management station.

4

Solution 4 Check the *SNMP - Trap Receiver* settings in the SNMPWEBCARD. The IP Address of the PC you are using must be entered in one of the *SNMP - Trap Receiver IP Address* fields. The *Community String* on the PC and SNMPWEBCARD must match.

Problem Unable to use AutoDiscover to find the agent from your management station.

5

Solution 5 Check the access control table in the SNMPWEBCARD. The Manager IP Address needs to have *write* permission in the access control table.

Problem The HTTP interface displays an error message:

6

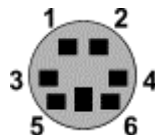
Action _ _ _ _ Fail

Solution 6 This may be normal, and not an error condition. If the previous command is not yet finished, another command cannot be executed. You must wait until the previous command has finished.

SNMPWEBCARD	
CPU	Intel 80186-25
Memory	ROM/RAM: 512Kbytes NVRAM: 2Kbytes
Power Consumption:	< 4 Watts
Power Input:	12 VDC regulated
Size:	130mm (L) x 60mm (W)
Ethernet Connector:	10 BaseT RJ-45 phone jack
LEDs:	2
DIP Switches:	2
Temperature/Humidity Connection	PS/2 connector

Environmental Specifications	
Operating Temperature:	0~40 degrees C
Storage Temperature:	-10~70 degrees C
Shipping Temperature:	-40~70 degrees C
Operating Humidity:	10~80 percent
Storage Humidity:	5~90 percent
Shipping Humidity:	5~100 percent

PS/2 Connector



PS/2 Connector Pins		
Pin	Name	Description
1	GND	Ground
2	+9V or +12V	Power
3		Not used
4		Not used
5	Tx	Serial transmit
6	Rx	Serial receive

Serial Port – Adapter Card

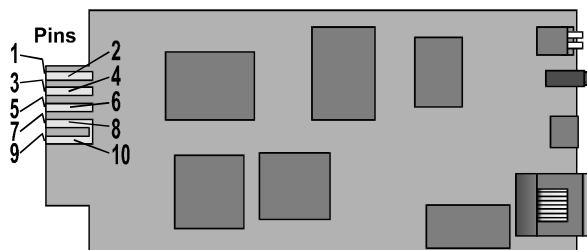


Figure 2:- Pin Assignments

PIN	Name	Description
1	GND	+12V GND
2	+12V	+12V Power
3	RXDUPS	Connect to UPS Tx signal
4	TXDUPS	Connect to UPS Rx signal
5	RXDPC	Connect to terminal Tx signal
6	TXDPC	Connect to terminal Rx signal
7	Not used	
8	SNMPSIG	SNMP card detect, connect to pin-10
9	GND	+12V GND
10	+VCC	Provided by UPS